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TO: Sumesh Kaushal **Location: REM/2C70** **Art Unit: 1636** **Wednesday, December 29, 2004** **Case Serial Number: 09/442542**	**From: Mary Jane Ruhl** **Location: Biotech-Chem Library** **Remsen 1-A-62** **Phone: 571-272-2524** **maryjane.ruhl@uspto.gov**

Search Notes

Examiner Kaushal,

Here are the results for your recent search request.

Please feel free to contact me if you have any questions about these results.

Thank you for using STIC services. We appreciate the opportunity to serve you.

Sincerely,

Mary Jane Ruhl
Technical Information Specialist
STIC
Remsen 1-A-62
Ext. 22524

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     FILE 'HCAPLUS' ENTERED AT 14:56:16 ON 29 DEC 2004
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L1             29 SEA ABB=ON  ("SHEA LONNIE"/AU OR "SHEA LONNIE D"/AU)
                  E BONADIO JEFFREY/AU
L2             73 SEA ABB=ON  ("BONADIO J"/AU OR "BONADIO JEFFREY"/AU OR
                  "BONADIO JEFFREY F"/AU)
                  E MOONEY DAVID/AU
L3            155 SEA ABB=ON  ("MOONEY DAVID"/AU OR "MOONEY DAVID A"/AU OR
                  "MOONEY DAVID E"/AU OR "MOONEY DAVID J"/AU OR "MOONEY DAVID
                  M"/AU OR "MOONEY DAVID S"/AU OR "MOONEY DAVID W"/AU)
L4              1 SEA ABB=ON  L1 AND L2 AND L3

     FILE 'REGISTRY' ENTERED AT 15:25:19 ON 29 DEC 2004
                  E NUCLEIC ACID/CN

     FILE 'HCAPLUS' ENTERED AT 15:25:29 ON 29 DEC 2004
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L6         240573 SEA ABB=ON  L5 AND (?STRUCT? AND ?POROUS? OR ?PORE? OR ?CELL?)
L7            130 SEA ABB=ON  L6 AND ?ALGINAT?
L8              1 SEA ABB=ON  L7 AND ?CELL?(W)?INTERACT?
L9              1 SEA ABB=ON  L7 AND ?TISSUE?(W)?ENGINEER?
L10             3 SEA ABB=ON  L7 AND ?STRUCT?(W)(?MATRIX? OR ?MATRICES?)
L11            57 SEA ABB=ON  L7 AND (?LEACH? OR ?POLYMER?)
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L13             5 SEA ABB=ON  L8 OR L9 OR L10 OR L12
L14             4 SEA ABB=ON  L13 AND (?COMPOS? OR ?METHOD?(6A)(?PRODUC? OR
                  ?PROCES? OR ?SYNTH? OR ?MAKE?))
L15             5 SEA ABB=ON  L13 OR L14

     FILE 'MEDLINE, BIOSIS, EMBASE, JAPIO, JICST-EPLUS, COMPENDEX, APOLLIT,
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L15           5 SEA FILE=HCAPLUS ABB=ON  L13 OR L14

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L15  ANSWER 1 OF 5  HCAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:         2004:567705  HCAPLUS
DOCUMENT NUMBER:          141:427827
TITLE:                    Development of standards for the characterization of
                          natural materials used in tissue
                          engineered medical products (TEMPs)
AUTHOR(S):                Kaplan, David S.
CORPORATE SOURCE:         Natural Biological Materials Characterization and Test
                          Method Development, FDA, Office of Science and
                          Technology, Center for Devices and Radiological
                          Health, Rockville, MD, 20852, USA
SOURCE:                   ASTM Special Technical Publication (2004), STP
                          1452(Tissue Engineered Medical Products (TEMPs)),
                          172-175
                          CODEN: ASTTA8; ISSN: 0066-0558
PUBLISHER:                ASTM International
DOCUMENT TYPE:            Journal; General Review
LANGUAGE:                 English
AB   A review. ASTM Committee on F4 Medical and Surgical Materials and
     Devices, Division IV, Tissue Engineered Medical
     Products (TEMPs), Biomaterials and Biomols. for TEMPs Subcommittee (F4.42)
     has been developing stds. for characterizing natural materials used in
     TEMPs. Natural materials include alginate, chitosan, collagen
     and hyaluronate. These materials support cell growth and
     differentiation on TEMPs substrates and scaffolds. Natural materials have
     been used in a variety of applications, including encapsulation,
     cell seeding, development of "memory" biomaterials, as well as
     degradable scaffolds, growth factor/nucleic acid
     delivery vehicles, and as a carrier to improve product handling
     characteristics. These materials have typically been very poorly
     characterized as to their chemical, phys. and biol. properties. This has
     resulted in variability in the products produced from these starting
     materials. The development of Standard Guides and Test Methods for
     characterizing natural materials is anticipated to reduce the variability
     of these starting materials and to aid in the assessment of the safety of
     the subsequent TEMPs. Three Standard Guides for characterizing the natural
     materials that are used as starting materials in the production of TEMPs have
     been developed and approved as ASTM standard guides. The first guide deals
     with Alginate, while the second guide deals with Chitosan and
     Chitosan salts. A third guide was recently approved for the
     characterization of Type I collagen used for surgical implants and
     substrates for TEMPs. Standard test methods are under development for the use
     of 1H-NMR to determine the mol. weight of alginate and the degree of
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deacetylation of chitosan. Planned future documents will include guides to characterize addnl. types of collagen and hyaluronate, as well as the development of addnl. standard test methods for characterizing the natural materials.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:633053 HCAPLUS
DOCUMENT NUMBER: 139:169383
TITLE: Novel wound healing **composition** not containing bovine-derived activating reagents
INVENTOR(S): Britton, Calvin; Dellinger, Alex; Limbird, Jim; Keller, Carl; Worden, Charles
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 7 pp., Cont.-in-part of U.S. Ser. No. 898,316, abandoned.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003152639	A1	20030814	US 2002-323861	20021217
US 2003007957	A1	20030109	US 2001-898316	20010703
PRIORITY APPLN. INFO.:			US 2001-898316 B2	20010703

AB A wound care preparation free from bovine-derived activating agents is disclosed for use in wound care, for both topical wounds and surgical wounds. The preparation is isolated by first obtaining an amount of whole blood from the patient and treating the whole blood with one or more anti-clotting agents, subjecting the whole blood to a centrifugation process to obtain an amount of platelet-rich plasma, adding to the platelet-rich plasma an amount of anti-clotting neutralizing agent, and mixing the platelet-rich plasma with a **structural matrix** to increase viscosity of the preparation In use, the viscous preparation can be applied directly to a wound or surgery incision and the viscous preparation may be mixed with other wound healing agents, growth matrixes, or promoters such as antifungal agents, antibiotics, and preservatives. For example, platelet-rich plasma (PRP) was obtained and combined with one part powdered vitamin C and 3 parts chitosan. After several minutes a golden colored gel was formed. The gel can be applied to the wound bed and remainder stored and refrigerated for at least 5-7 days (the viable life span of a platelet) and subsequently used. Gel viscosity can be controlled by (i) adding more PRP to make the gel less viscous, (ii) adding less vitamin C to decrease the acidity therefore decrease viscosity, or (iii) adding more vitamin C to increase acidity and therefore increase viscosity.

L15 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:23353 HCAPLUS
DOCUMENT NUMBER: 138:49970
TITLE: Novel wound healing **composition** not containing bovine-derived activating reagents
INVENTOR(S): Britton, Calvin; Dellinger, Alex; Limbird, Jim; Keller, Carl; Worden, Charles
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 7 pp.

CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003007957	A1	20030109	US 2001-898316	20010703
US 2003152639	A1	20030814	US 2002-323861	20021217

PRIORITY APPLN. INFO.: US 2001-898316 B2 20010703

AB A wound care preparation free from bovine-derived activating agents is disclosed for use in wound care, for both topical wounds and surgical wounds. The preparation is isolated by first obtaining an amount of whole blood from the patient and treating the whole blood with one or more anti-clotting agents, subjecting the whole blood to a centrifugation process to obtain an amount of platelet-rich plasma, adding to the platelet-rich plasma an amount of anti-clotting neutralizing agent, and mixing the platelet-rich plasma with a **structural matrix** to increase viscosity of the preparation In use, the viscous preparation can be applied directly to a wound or surgery incision and the viscous preparation may be mixed with other wound healing agents, growth matrixes, or promoters such as anti-fungal agents, anti-biotic agents, and preservatives.

L15 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:736893 HCAPLUS
DOCUMENT NUMBER: 131:332976
TITLE: Sustained dna delivery from **structural** **porous** matrices for gene therapy applications with special emphasis is on bone formation and regeneration
INVENTOR(S): Shea, Lonnie D.; Bonadido, Jeffrey; Mooney, David J.
PATENT ASSIGNEE(S): The Regents of the University of Michigan, USA
SOURCE: PCT Int. Appl., 144 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9958656	A2	19991118	WO 1999-US10330	19990512
WO 9958656	A3	20000106		
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BJ, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9938986	A1	19991129	AU 1999-38986	19990512

PRIORITY APPLN. INFO.: US 1998-85305P P 19980513
US 1998-109054P P 19981119
WO 1999-US10330 W 19990512

AB Disclosed are particular 3-dimensional **structural** **matrixes** containing DNA and their use in the prolonged release of DNA

in various biol. environments. The **structural matrix** is a **porous polymer** [PLGA]-based containing **pores** formed by gas foaming involving inert gases (CO2) and **leaching** out of a water-soluble particulate (salt, NACL, sugar, glucose, sucrose, mannitol) when exposed to body fluids. The admixt. is compression molded into a selected size and shape prior to executing the gas foaming process. The **structural matrix** may also be an **alginate** or modified **alginate** matrix. This **structural matrix** is a biocompatible or biodegradable matrix. It may also be a lactic acid **polymer**, glycolic acid **polymer** or lactic acid/glycolic acid **copolymer** matrix. At least part of this matrix may be comprised of lactic acid/glycolic acid (PLGA) **copolymer** matrix. The **structural matrix** may be modified where one side section is bonded to one **cell interaction** mol. such as **cell** adhesion mols., **cell** attachment peptides, proteoglycan attachment peptide sequences, proteoglycans, **cell** adhesion polysaccharides, growth factors, **cell** adhesion enzymes, RGD peptide, fibronectin, vitronectin, Laminin A, Laminin B1, Laminin B2, collagen 1 and thrombospondin. The DNA-matrix materials are created such that they maintain a defined space, allowing **cellular** migration, transfection and proliferation to occur in a controlled manner. Such DNA-containing **structural matrixes** are thus particularly useful in in vivo **cell** transfection and gene expression in the context of gene therapy. This may encode a protein for stimulating bone progenitors or wound healing in fibroblast or in tissue or organ regeneration or transplantation or an antigen for immunity or cytotoxic or apoptosis-inducing protein or a transcription factor or elongation factor or **cell** cycle control protein or kinase or phosphatase or DNA repair protein or oncogene or tumor suppressor or angiogenic protein or anti-angiogenic protein or immune response stimulating protein or **cell** surface receptor or accessory signaling mol. or transport protein or anti-bacterial or anti-viral protein or hormone or neurotransmitter or growth factor or growth factor receptor or interferon or interleukin or chemokine or cytokine or colony stimulating factor or chemotactic factor protein of growth hormone or parathyroid hormone or PTH1-34 polypeptide or bone morphogenic protein or BMP-2A or BMP-2B or BMP-3 or BMP-4 or BMP-5 or BMP-6 or BMP-7 or BMP-8 or TGF-α or TGF-β1 or TGF-β2 or latent TGFβ binding protein or activin/inhibin protein or FGF or GMCSF or EGF or PDGF or insulin-like growth factor or leukemia inhibitory factor. This method allows for the use in gene transfer to **cells** within a tissue site and in manufacture of a medicament for gene therapy. Implantable medical devices comprising this gene-matrix are described. The release of **nucleic acids** from the matrix is controlled by diffusion. This method also applies to cancer therapy or treating viral infection.

L15 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1957:59788 HCAPLUS
DOCUMENT NUMBER: 51:59788
ORIGINAL REFERENCE NO.: 51:11008b-f
TITLE: Structure formation by ion diffusion, simplex-ionotropism
AUTHOR(S): Thiele, Heinrich; Langmaack, Lothar
CORPORATE SOURCE: Univ. Kiel, Germany
SOURCE: Zeitschrift fuer Naturforschung (1957), 12B, 14-23
CODEN: ZNTFA2; ISSN: 0372-9516
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB Anisotropic gels can be obtained by allowing the counterions to diffuse

into a polyelectrolyte solution, or by mixing 2 polyelectrolyte solns. of opposite charge. In the latter case, however, membranes often are produced at the interface, which hinder further diffusion. To overcome this difficulty, the acid component can be used as the ester, which is hydrolyzed at the interface by the polybase; e.g., glycol **alginate** and polyethylene imine (I). Another method is to start with a solution containing both components, and allow H+ or OH- to diffuse in. An example of this, with a low-mol. cation, is the diffusion of H+ into Cu(NH3)4++ **alginate** or **carboxymethylcellulose**; the Cu salts obtained by the **decomposition** of the complex with H+ form an anisotropic gel, which then exchanges its Cu++ for H+. A similar process can be carried out with 2 polyelectrolytes, e.g. alginic (II) or carrageenic acid with hydroxyethylpolyglucosamine (III), polyglucosamine, or gelatin, or poly(acrylic acid) with I. Also, polyampholytes, such as gelatin or ovalbumin (IV), can be used with polyacids, such as choindroitinsulfuric acid, or polybases, such as III. These systems show similarities to protein systems, in the fact that their swelling and soluble are smallest at the isoelec. point, and their turbidity greatest. Some resemble the albumins in their solubility relations, others resemble globulins or other classes of proteins. The effect of pH, the ratio of the concns. of the 2 components, and the chain length was studied. The birefringence was maximum at the isoelec. point, at a concentration ratio close to equivalence, and decreased with chain length (this was studied with gelatin partly degraded with trypsin, or hyaluronic acid partly degraded with hyaluronidase). In IV-II gels, birefringence was 3-4 times as great when IV had been denatured by heat, probably because denaturation makes it more fibrous. Alignment of the polyelectrolyte chains, in a circular spot of gel around the added drop of acid or base, is often radial in an inner ring and tangential in an outer ring. It is sometimes possible to dissolve one component out of the gel, leaving the other component ordered. E.g. in an IV-II gel, IV can be insolubilized with HCHO, or II with Ca(OH)2, and the soluble component **leached** out. Anisotropic gels can also be formed from a single ampholyte, e.g. gelatin. The systems studied are compared to native biol. structures, e.g. collagen and polysaccharides in bone and cartilage, actin and myosin in muscle, or **nucleic acid** and protein.

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L6       240573 SEA FILE=HCAPLUS ABB=ON  L5 AND (?STRUCT? AND ?POROUS? OR
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L7          130 SEA FILE=HCAPLUS ABB=ON  L6 AND ?ALGINAT?
L8            1 SEA FILE=HCAPLUS ABB=ON  L7 AND ?CELL?(W)?INTERACT?
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L15           5 SEA FILE=HCAPLUS ABB=ON  L13 OR L14
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L16  ANSWER 1 OF 1  COMPENDEX  COPYRIGHT 2004 EEI on STN
ACCESSION NUMBER:         2004(32):4736  COMPENDEX
TITLE:                    Development of standards for the characterization of
                          natural materials used in Tissue
                          Engineered Medical Products (TEMPs).
AUTHOR:                   Kaplan, David S. (FDA Ctr. for Devices/Radiological
                          Hlth. Office of Science and Technology, Rockville, MD
                          20852, United States)
SOURCE:                   ASTM Special Technical Publication n 1452 2004.p
                          172-175
                          CODEN: ASTTA8    ISSN: 1040-3094
PUBLICATION YEAR:         2004
DOCUMENT TYPE:            Journal
TREATMENT CODE:           Theoretical
LANGUAGE:                 English
AN   2004(32):4736  COMPENDEX
AB   Development of standards for the characterization of natural materials
     used in tissue engineered medical products (TEMP) was
     discussed. Three Standard guides for characterizing the natural materials
     that are used as starting materials in the production of TEMPs have been
     developed. The first guide deals with Alginate, while the second
     guide deals with Chitosan and Chitosan salts. The third guide deals with
     characterization of collagen.(Edited abstract) 4 Refs.
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Inventor Search

=> d ibib abs ind l4 1-1

L4 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:366387 HCAPLUS
TITLE: DNA delivery from polymer matrices for tissue engineering
AUTHOR(S): **Shea, Lonnie**; Smiley, Elizabeth; **Bonadio, Jeffrey**; **Mooney, David J.**
CORPORATE SOURCE: Department of Biologic and Materials Science, University of Michigan, Ann Arbor, MI, 48109-1078, USA
SOURCE: Nature Biotechnology (1999), 17(6), 551-554
CODEN: NABIF9; ISSN: 1087-0156
PUBLISHER: Nature America
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We have proposed engineering tissues by the incorporation and sustained release of plasmids encoding tissue-inductive proteins from polymer matrixes. Matrixes of poly(lactide-co-glycolide) (PLG) were loaded with plasmid, which was subsequently released over a period ranging from days to a month in vitro. Sustained delivery of plasmid DNA from matrixes led to the transfection of large nos. of cells. Furthermore, in vivo delivery of a plasmid encoding platelet-derived growth factor enhanced matrix deposition and blood vessel formation in the developing tissue. This method of DNA delivery may find utility in tissue engineering and gene therapy applications.
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT